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## EDITORIAL.

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It would seem that there may be need to select for technical use suitable terms to specifically designate the critical factors of the sea border phenomena described in the first article of this issue. At least three agencies coöperate in producing a structural and topographic form which has a vital geologic function, and to which specific reference may frequently need to be made without descriptive circumlocution. The same may be said of some of the contributory factors and processes involved. The functions of these are more or less masked, and even antagonized, by adventitious phenomena which need to be distinguished and excluded. (1) There is first the building of the sediments into a submarine terrace. The plane toward which this terrace is built up is identical with that toward which the land is cut down. The two processes are complementary. The degradation of the one furnishes the material for the aggradation of the other, and their final result is a base-plain continuous with a terrace plain, both alike determined by the sea level. As the former process is called baseleveling, the latter might be designated base-terracing and the result a base-terrace, but these terms are not altogether felicitous, because *base* inevitably carries the idea of something beneath rather than above, and cannot perhaps easily be made to convey the conception of an overlying plain to which aggradation approaches, and in which it finds its summit limit. A happy term for a summit plain to which aggradation is limited just as degradation is limited to a base-plain does not as yet suggest itself. (2) There is next the cutting landward of the sea edge, whereby the sea shelf is extended at the expense of the land. This is essentially a base-leveling process, and as such perhaps needs no other term than baseleveling, except as qualifiers may occasionally be required to indicate the particular mode of its action. (3) Then there

is the lifting of the sea surface, whether by filling, by the spreading of the continent in its slow movement towards isostatic equilibrium, or by changes in the sea bottom. The effects in any case are essentially the same, and are world-wide by reason of the common level maintained by the ocean in all its parts. This sea lifting combines with and modifies both the terrace building and the shore cutting, and the common result is a shelf occupied by a shallow sea. This shelf is the great theater of sedimentation and of littoral life evolution. Its peculiar configuration, by giving great breadth to the shallow water circum-continental seas upon a slight lifting of the sea level, or after the erosion and terrace building of prolonged quiescence, on the one hand, and by narrowing these shallow seas to mere fringing ribbons upon the drawing away of the sea until its shore stands against the abysmal edge of the shelf, on the other, makes it a vital factor in geological progress and gives occasion for a specific designation.

It is, however, desirable to exclude those areas that become submerged by their own individual movements and take on the similitude of submarine terraces without having any genetic or systematic relation to the sea level as such. They may stand at such depth as to give an expansion of shallow water just when the withdrawal of the sea narrows the shallow water tract on the true genetic shelf, and thus they may antagonize the evolutionary effects of the latter upon littoral life. They may, to be sure, coincide so nearly with the true shelf in position as to work concurrently with it and increase its effects, but this, from the nature of the case, will rather be the exception than the rule. Such adventitiously submerged portions of the continent must be regarded as factors that vitiate the ideal workings of the true sea-generated terrace.

Both the true sea-formed terrace and the continental border submerged by subsidence are at present embraced without distinction under the phrase "continental shelf"—a designation that fairly represents the topographic fact, but does not carry with it any specific idea of the diverse agencies involved in its

production or their opposed evolutionary functions. It does not discriminate between those features which are coöperative and world-wide, on the one hand, and those which are local and adventitious on the other.

Several terms are used tentatively in the indicated article to designate the true sea-generated terrace. Of these "circum-continental terrace," "pericoastal terrace," and "peripheral terrace" are neither brief nor especially euphonious, and only partially imply the most important relationships of the formation. The term "sea shelf" is in many respects suitable, as it indicates the configuration, in a measure, and implies, or is susceptible of implying, adaptation to the reception of sediments and to the support of littoral life — the two most vital functions which it is desired to express; but it is not clear that the phrase is sufficiently different from the already adopted "continental shelf" to make it easy to develop a technical distinction in its usage. It has, however, the merit of implying a general and not a limited phenomenon, as is somewhat obscurely suggested in "continental shelf." This general sense is peculiarly appropriate, since the terrace is as universal (at least in its initial stages) as the sea border, and is a necessary consequence of the relations of sea and land. It may, perhaps, be best to use the universal term "sea shelf" for the true genetic phases of the submarine terrace, and to leave "continental shelf" to be used in its present undifferentiated application to the submerged border of a continent without regard to its specific genesis. But this suggestion is made with the most tentative intent.

The matter is here discussed not to propose a name for acceptance, but with the quite opposite purpose of filing a caveat in behalf of a free consideration of the merits of terms and a provisional use of them until experience shall bring into clear realization precisely what needs to be named and what terms best supply the need. The basal idea of the doctrine of multiple working hypotheses is applicable to nomenclature as well as geologic theory, and its use here is suggested. The subject is believed to have sufficient importance to justify it. T. C. C.